

# CLAIM

1. A semiconductor device comprising:  
a logic circuit having a thin film transistor over an insulating surface; and  
a detection means which detects an operating frequency of the logic circuit and  
5 outputs a detection result to a threshold value control circuit,  
wherein the thin film transistor comprises a first gate electrode inputted with a  
logic signal and a second gate electrode inputted with a threshold value control signal  
from the threshold value control circuit.

10 2. The semiconductor device according to claim 1,  
wherein a semiconductor thin film is provided over the second gate electrode and  
the first electrode is provided over the semiconductor thin film.

3. A CPU provided with the semiconductor device set forth in claim 1.

15 4. An image processing circuit provided with the semiconductor device set forth  
in claim 1.

5. An electronic device provided with the semiconductor device set forth in claim  
20 1.

6. A semiconductor device comprising:  
a logic circuit having a thin film transistor over an insulating surface; and  
a detection means which detects an operating frequency of the logic circuit and  
25 outputs a detection result to a threshold value control circuit,  
wherein the thin film transistor comprises a first gate electrode inputted with a  
logic signal and a second gate electrode inputted with a threshold value control signal  
from the threshold value control circuit; and  
wherein an amount of a current flowing between a source electrode and a drain  
30 electrode of the thin film transistor is controlled by the threshold value control signal.

7. The semiconductor device according to claim 6,  
wherein a semiconductor thin film is provided over the second gate electrode and  
the first gate electrode is provided over the semiconductor thin film.

5           8. A CPU provided with the semiconductor device set forth in claim 6.

9. An image processing circuit provided with the semiconductor device set forth  
in claim 6.

10           10. An electronic device provided with the semiconductor device set forth in  
claim 6.

11. A semiconductor device comprising:  
a logic circuit having a thin film transistor over an insulating surface; and  
15           a recording medium which detects an operating frequency of the logic circuit and  
stores a program for outputting a detection result to a threshold value control circuit,  
wherein the thin film transistor comprises a first gate electrode inputted with a  
logic signal and a second gate electrode inputted with a threshold value control signal  
from the threshold value control circuit.

20           12. The semiconductor device according to claim 11,  
wherein a semiconductor thin film is provided over the second gate electrode and  
the first gate electrode is provided over the semiconductor thin film.

25           13. A CPU provided with the semiconductor device set forth in claim 11.

14. A image processing circuit provided with the semiconductor device set forth  
in claim 11.

30           15. An electronic device provided with the semiconductor device set forth in  
claim 11.

16. A semiconductor device comprising:  
a logic circuit having a thin film transistor over an insulating surface; and  
a recording medium which detects an operating frequency of the logic circuit and  
5 stores a program for outputting a detection result to a threshold value control circuit,  
wherein the thin film transistor comprises a first gate electrode inputted with a  
logic signal and a second gate electrode inputted with a threshold control signal from the  
threshold value control circuit; and  
wherein an amount of a current flowing between a source electrode and a drain  
10 electrode of the thin film transistor by the threshold value control signal.

17. The semiconductor device according to claim 16,  
wherein a semiconductor thin film is provided over the second gate electrode and  
the first gate electrode is provided over the semiconductor thin film.

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18. A CPU provided with the semiconductor device set forth in claim 16.

19. An image processing circuit provided with the semiconductor device set forth  
in claim 16.

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20. An electronic device provided with the semiconductor device set forth in  
claim 16.

21. A driving method of a semiconductor device comprising:  
25 a logic circuit having a thin film transistor over an insulating surface; and  
a detection means which detects an operating frequency of the logic circuit and  
outputs a detection result to a threshold value control circuit,  
wherein the detection means discriminates a first mode or a second mode; and  
wherein the threshold value control circuit outputs a threshold value control signal  
30 according to the first or the second mode to the logic circuit.

22. A driving method of a semiconductor device comprising:  
a logic circuit having a thin film transistor over an insulating surface; and  
a detection means which detects an operating frequency of the logic circuit and  
outputs a detection result to a threshold value control circuit,  
5 wherein the detection means discriminates a pending mode or an active mode; and  
wherein the threshold value control circuits outputs the threshold value control  
circuit which raises a threshold value of the thin film transistor to the logic circuit when  
the detection means discriminates the pending mode.

10 23. A semiconductor device comprising:  
a substrate having an insulating surface;  
a logic circuit having a thin film transistor over the substrate;  
a detection means for detecting an operating frequency of the logic circuit,  
electrically connected to the logic circuit; and  
15 a threshold value control circuit electrically connected to the detection means.

24. A semiconductor device comprising:  
a substrate having an insulating surface;  
a logic circuit having a thin film transistor over the substrate;  
20 an address comparator electrically connected to the logic circuit;  
a counter electrically connected to the address comparator;  
a discrimination circuit electrically connected to the counter; and  
a threshold value control circuit electrically connected to the discrimination  
circuit.

25 25. A semiconductor device comprising:  
a substrate having an insulating surface;  
a logic circuit having a thin film transistor over the substrate;  
a detection means for detecting an operating frequency of the logic circuit,  
30 electrically connected to the logic circuit; and  
a threshold value control circuit which is electrically connected to the detection

means,

wherein the thin film transistor comprises a plurality of gate electrodes; and

wherein the threshold value control circuit is connected to at least one of the plurality of gate electrodes.

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26. A semiconductor device comprising:

a substrate having an insulating surface;

a logic circuit having a thin film transistor over the substrate;

an address comparator electrically connected to the logic circuit;

10 a counter electrically connected to the address comparator;

a discrimination circuit electrically connected to the counter; and

a threshold value control circuit electrically connected to the discrimination circuit,

wherein the thin film transistor comprises a plurality of gate electrodes; and

15 wherein the threshold value control circuit is electrically connected to at least one of the plurality of gate electrodes.